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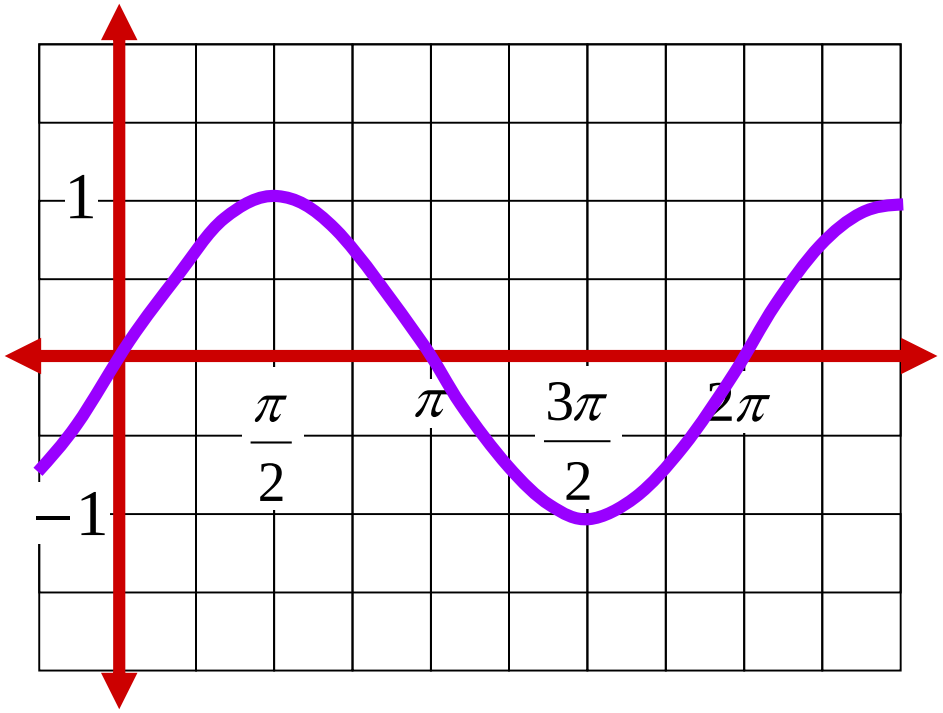
Translations of Trigonometric Graphs

Translation of a Sine Function



$$y = \sin x + 1$$

Amplitude 1

Period

2π

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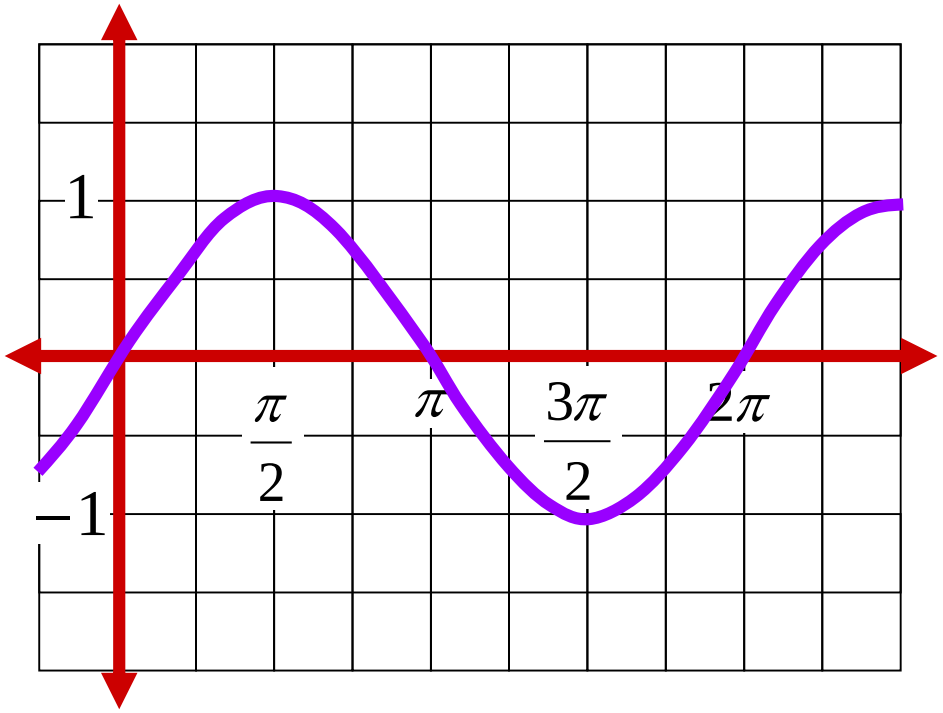
Translations of Trigonometric Graphs

Translation of a Sine Function



$$y = \sin\left(x + \frac{\pi}{2}\right)$$

Amplitude 1

Period

2π

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Graphing a Vertical Translation

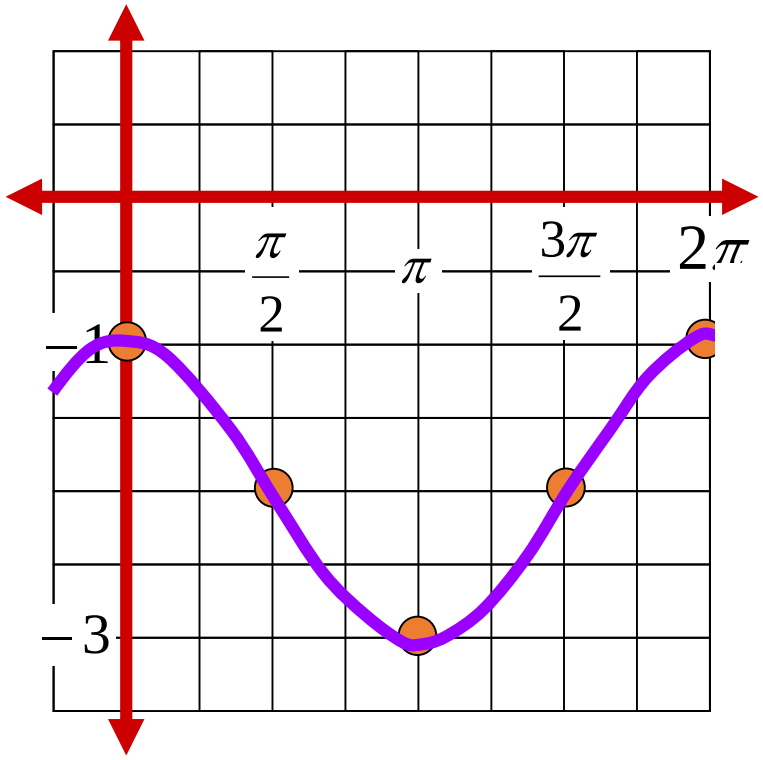
Graph the function.

1. $y = -2 + \cos x$

Amplitude 1

Translation down 2

Period 2π



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Graphing a Vertical Translation

Graph the function.

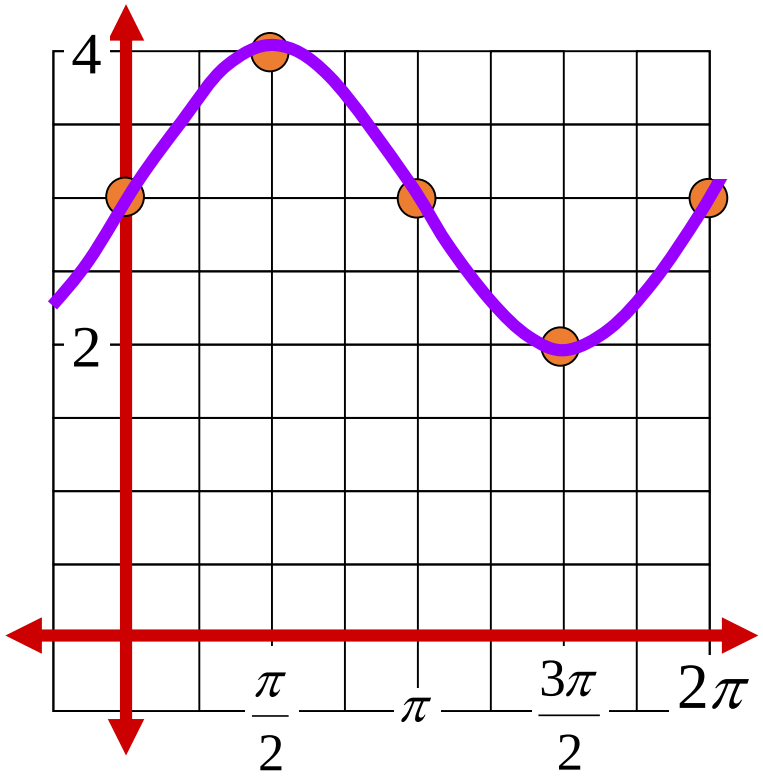
2. $y = 3 + \sin x$

Amplitude 1

Translation

up 3

Period 2π



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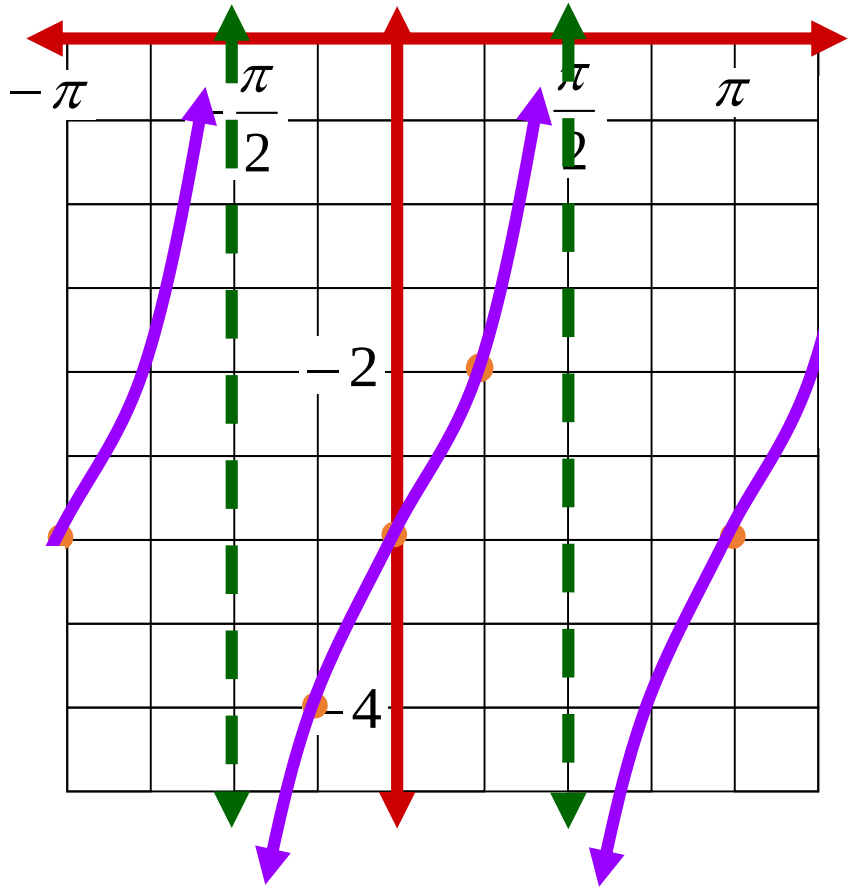
Graphing a Vertical Translation

Graph the function.

3. $y = -3 + \tan x$

Translation down 3

Period π



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Graphing a Horizontal Translation

Graph the function.

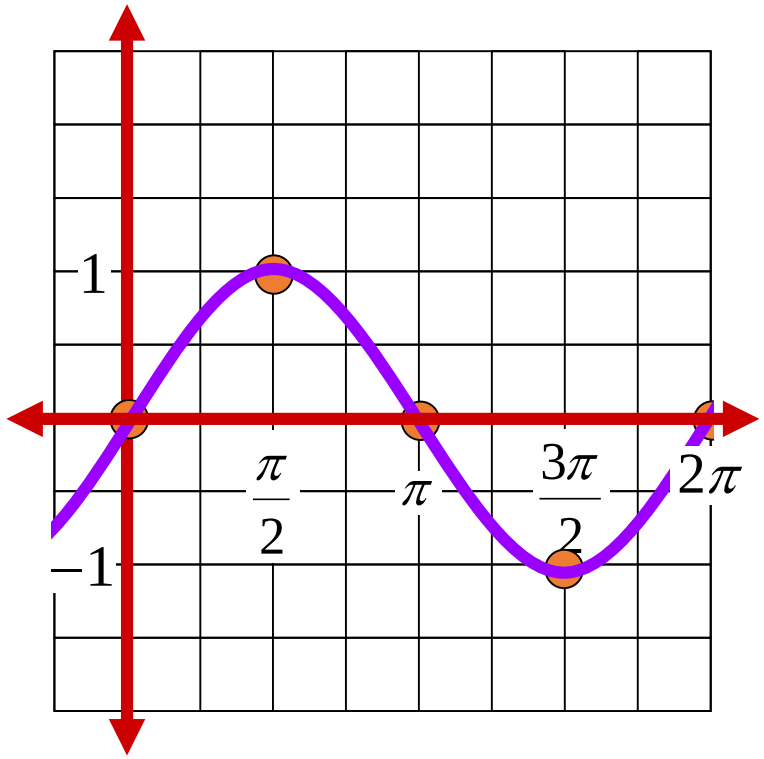
4. $y = \sin(x - \pi)$

Amplitude 1

Period 2π

Translation

right π



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Graphing a Horizontal Translation

Graph the function.

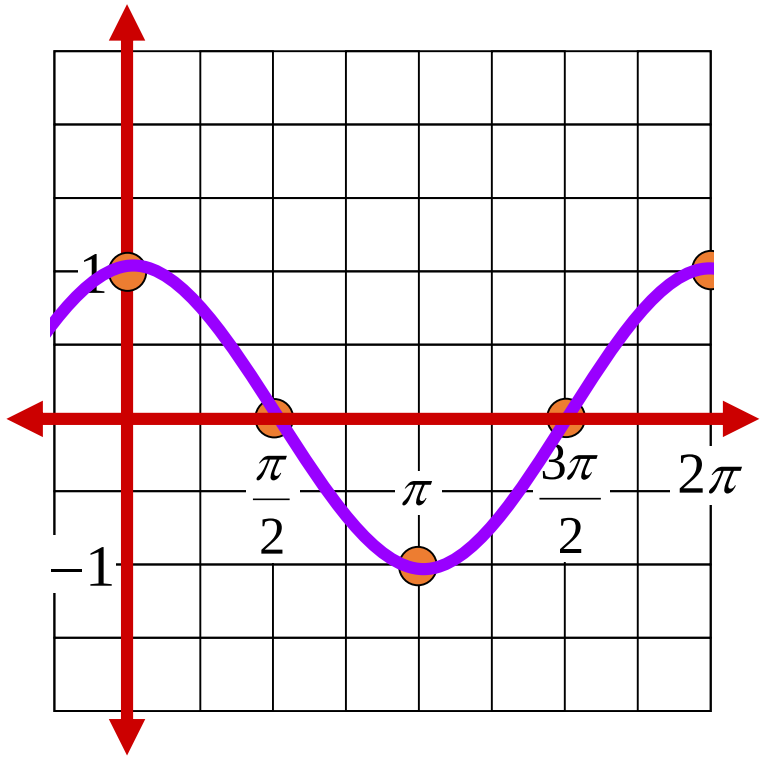
5. $y = \cos(x + \pi)$

Amplitude 1

Period 2π

Translation

left π



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Graphing a Horizontal Translation

Graph the function.

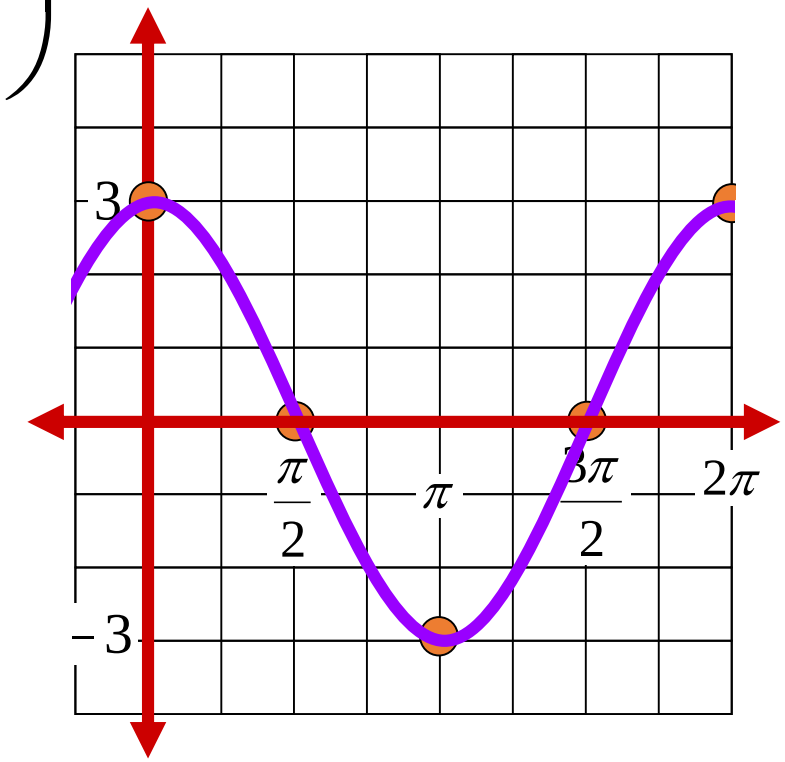
6. $y = 3\cos\left(x - \frac{\pi}{2}\right)$

Amplitude 3

Period 2π

Translation

right $\pi/2$



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Graphing a Reflection

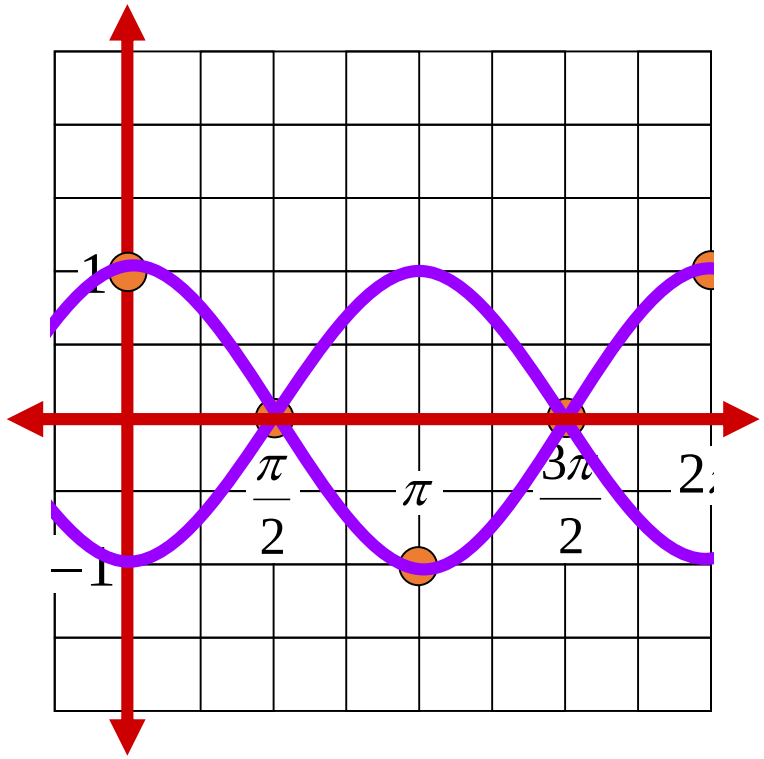
Graph the function.

7. $y = -\cos x$

Amplitude 1

Period 2π

Reflection over x-axis



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Graphing a Reflection

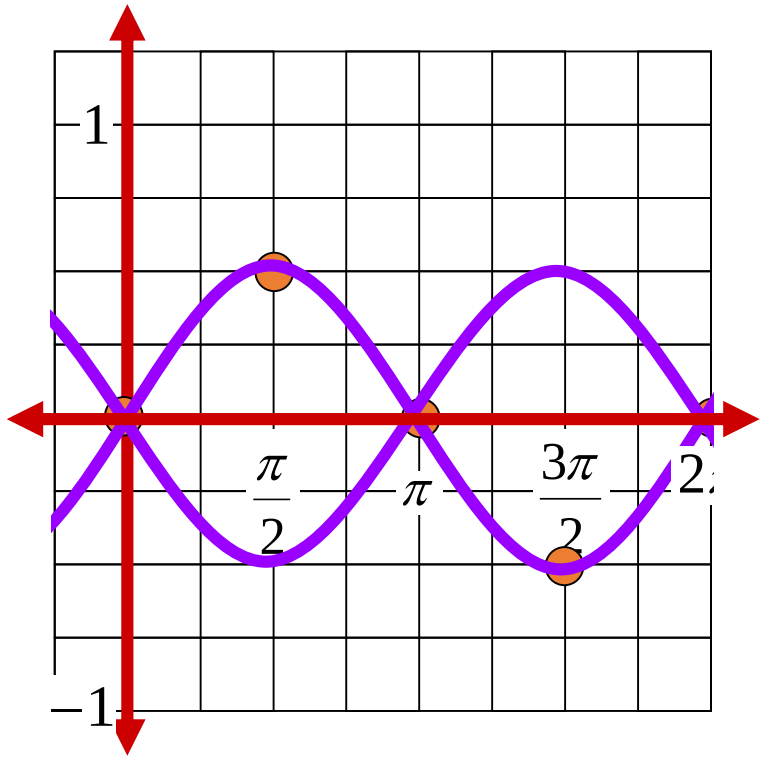
Graph the function.

$$7.\ y = -\frac{1}{2}\sin x$$

Amplitude $\frac{1}{2}$

Period 2π

Reflection over x-axis



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Graphing a Reflection

Graph the function.

$$8.\ y = -3\tan\frac{1}{2}x$$

Period $\dfrac{\pi}{1/2}$

2π

Reflection over x-axis